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(103 C 1
(104 D 5)

特許公報

昭36-12387

公告 昭36.8.2 出願 昭32.10.30 特願 昭32-26721
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(全2頁)

双眼鏡式カメラ

図面の略解

図面は本発明の要部を示すものであつて第1図はその縦断面を示し第2図は第1図のX-X断面を矢印方向より見た図面であり第3図は第1図の符号5の部材を示す図面である。

発明の詳細なる説明

従来双眼鏡を利用して写真撮影を行う方法がある。例えば双眼鏡の接眼鏡の部分にカメラを装着し望遠レンズの役目を行わせる方法が提案されている。この方法では双眼鏡を用いて望遠撮影が行えるが双眼鏡とカメラと共に必要とし更に双眼鏡にて望遠しつつ必要箇所を撮影するにはカメラを取付せねばならず双眼鏡にて望見しつつ必要箇所を遠等するには不便である。

本発明はこれ等の欠点を改善し双眼鏡の一部に小型カメラを組み込み双眼鏡によつて望遠しつつ撮影せんと欲する被写体を速写し得ることを特徴としたもので別個にカメラ等を装着する手数を必要とせず双眼鏡と望遠カメラとを兼用させたものである。

本発明に於ける双眼鏡式カメラは焦点の調節を双眼鏡の焦点面を固定し対物レンズを出入させて行うように一方の鏡筒の焦点面を固定し対物レンズを出入させて行うようにし一方の鏡筒の焦点面に鏡筒に組込んだカメラのフィルム面が一致するようになし撮影時の外はカメラを焦点位置より動かし接眼鏡によつてその焦点面を見得る如くなし更に他方の鏡筒にはクロス及び撮影視野を示す枠を刻んだガラス板を焦点面に位置せしめたことを特徴とする双眼鏡式カメラである。

而して本発明による時は前述の如く双眼鏡として望遠しつつ必要とする部分を適時に速写し得ると共に別個にカメラを必要とせず携行が極めて簡便なるものであつてこれは本発明の双眼鏡式カメラ図面について詳記する具体的説明によつて了解されるであろう。第1図は本発明の双眼鏡式カメラの断面図であつて対物レンズ1及び1'より入射する光線はプリズム2, 2', 3, 3'を経て正立され焦点面O及びO'に結像し一方の眼鏡のみの方にその結像面に第3図に示す如き4なるクロス及び枠を附した薄いガラス板5を設け対物レンズ1及び1'にて出来た像を接眼鏡6及び6'にて見得るようになり焦点の調節は先ず接眼鏡6にてガラス板5上のクロス及び枠4が明瞭になるよう調節した後焦点調節グリップ7を回転しグリップ軸8に附したギヤー9と対物レンズの枠10, 10'に附したギヤー11, 11'を密合させグリップ7回転することにより軸8に附したギヤー10, 10'と対物レンズ枠に附したギヤー11, 11'により対物レ

ンズ枠10, 10'を回転し枠10, 10'に附したネジ12, 12'により対物レンズ枠10, 10'を軸方向に移動させ焦点を調節するようとする。13, 13'は双眼鏡の本体であつてカメラ14は図面の如く一方の鏡筒13内に内蔵し15はカメラのフィルム枠16はフォーカルプレンシヤッターでこれ等を含むカメラ14は第2図に示すようにカメラグリップ17を矢印方向に動かす時はカメラ支えピン18を中心としてカメラは点線位置或は実線位置になし得るから今カメラを点線位置にあらしめて接眼鏡6よりのぞく時ばカメラはその視野をさまたげず望遠鏡として作用するので他方の望遠鏡と共に双眼鏡として組み出来るカメラグリップ17を点線矢印方向に動かすとカメラのフィルム面は丁度焦点面に位置するようになつてゐるので他方の接眼鏡で覗いた風景が撮影される位置になりカメラ14のフィルムを巻きシヤッターをチャージして外部のシヤッター19を押す時はカメラ14のシヤッターが切れるようカーメラ14とシヤッターボタン19とを関係するようになしたものである。

前述の如き本発明の双眼鏡式カメラはその操作に当りカメラ14をカメラグリップ17により動かし接眼鏡6の視野をさまたげぬようにして接眼鏡6をガラス板5の面のクロス及び撮影範囲を示す枠4をよく見えるように調節した後焦点調節グリップ7を動かして被写体を普通双眼鏡同様に望見し若し撮影を行わんと欲する時はカメラグリップ17を動かし双眼鏡の一方の視野にカメラを位置せしめシヤッターボタン19を押して被写体を撮影するものである。本発明に使用するカメラは図面に示すようにフィルムマガジン及びスプール15及びフォーカルプレンシヤッター16等を一般公知のカメラを小型にした構造を有せしめ且シヤッターボタン19の操作によりカーメラ14内のシヤッターが切れるようになしたものである。

以上の如き本発明の双眼鏡式カメラは従来撮影が極めて困難であった遠方で高速で移動する被写体をも極めて容易に撮影出来ると共に双眼鏡としても使用し得る極めて機動性のある望遠カメラである。

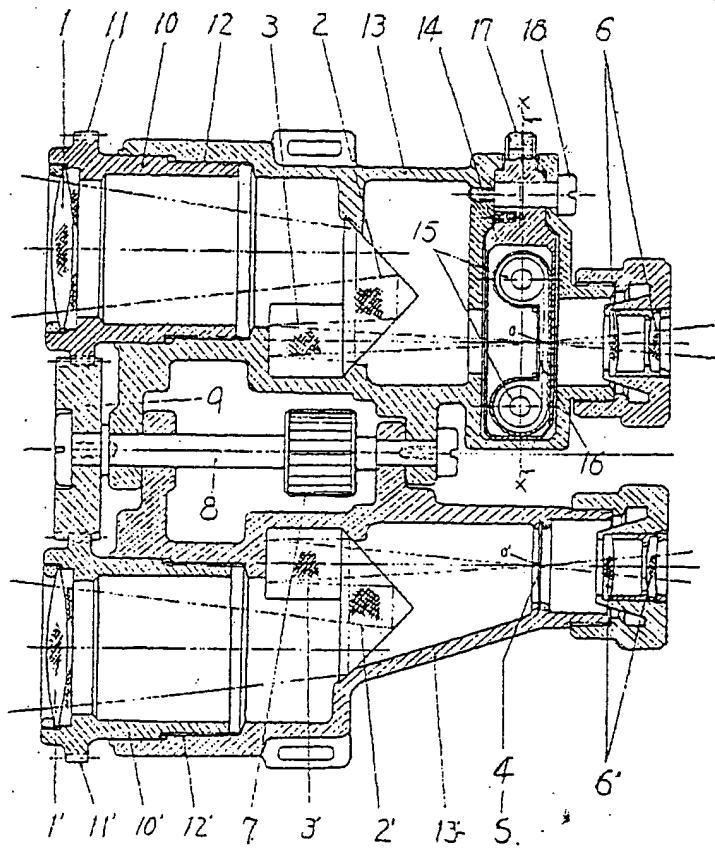
特許請求の範囲

本文に記載せる如く焦点の調節を焦点面を固定し対物レンズを出入させて行うようにした双眼鏡の一方の鏡筒に小型カメラを組み込み該カメラのフィルム面と対物レンズの焦点面と一致せしめ撮影時の外はカメラを焦点位置より移動させ接眼鏡によつてその焦点面を見得る如くなし他方の鏡筒にはクロス及び撮影視野を刻んだ薄いガラス板を焦点面に設けたることを特徴とする双眼鏡式カメラ。

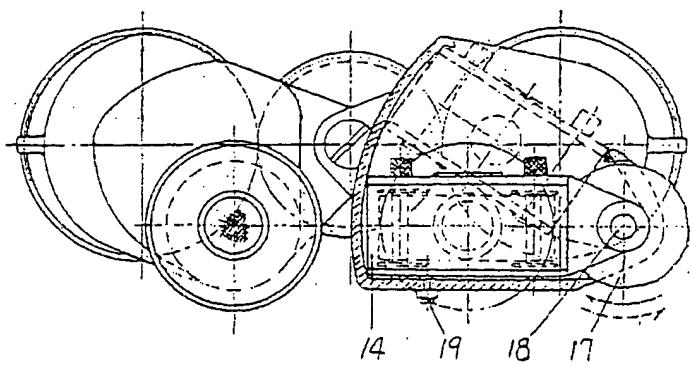
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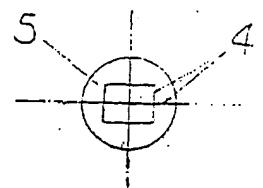
第1図



第2図



第3図



BINOCULAR TYPE CAMERA

Japanese Patent Publication No. Sho-36-12387

Published on: August 2, 1961

Application No. Sho-32-26721

Filed on: October 30, 1957

Inventor: Hiroshi Mito

SPECIFICATION

TITLE OF THE INVENTION

BINOCULAR TYPE CAMERA

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings show the main part of the present invention, FIG. 1 shows its longitudinal section, Fig. 2 is the X-X cross section of Fig. 1 viewed from the direction of the arrow, and Fig. 3 is a view showing a member designated by 5 of Fig. 1.

DETAILED DESCRIPTION OF THE INVENTION

Conventionally, there is a method of performing photography using binoculars. For example, a proposal has been made of a method of mounting a camera on an eye-piece part of binoculars so as to perform the role of a telephoto lens. According to this method, telephotography can be performed by use of the binoculars, but both binoculars and camera are required, and,

in order to photograph necessary objects while observing distant objects through the binoculars, the camera must be mounted, and therefore it is inconvenient to immediately photograph such necessary objects while observing distant objects by use of the binoculars.

The present invention resolves these deficiencies and is characterized by mounting a miniature camera on a part of binoculars and being capable of immediately photographing a photographic subject while observing a distant subject through binoculars, which is used both as binoculars and as a telephotographic camera without requiring the inconvenience to individually mount a camera etc.

The binocular type camera of the present invention is a binocular type camera characterized in that the focus is adjusted such that an objective lens is caused to move in and out while fixing the focal plane of binoculars, the objective lens is caused to move in and out while fixing the focal plane of one lens barrel, a film surface of a camera built in the lens barrel is caused to coincide with the focal plane of one lens barrel, the camera is moved from the focal point so as to be able to see the focal plane through an eye piece when photography is not performed, and, in the other lens barrel, a glass plate in which a frame indicating a cross and a photographic field

is carved is located at the focal plane.

Thus, according to the present invention, necessary objects are opportunely and immediately photographed while observing those distant objects through the binoculars as mentioned above, and this can be very easily carried out without individually requiring a camera, and this will be understood from a detailed description of the drawings and of the binocular type camera of the present invention. Fig. 1 is a sectional view of the binocular type camera of the present invention. Light rays incident from objective lenses 1 and 1' pass through prisms 2 and 2', are then erected, and form images on focal planes 0 and 0'. A thin glass plate 5 in which a cross and a frame designated by 4 are given to its image formation surface as shown in FIG. 3 is provided in one eyeglass, and an image formed by the objective lenses 1 and 1' is designed to be seen through eye pieces 6 and 6'. The focus is adjusted in such a way that the cross and the frame 4 on the glass plate 5 are first adjusted to become clear by the eye piece 6', a focus adjusting grip 7 is then rotated, a gear 9 given to a grip shaft 8 is then engaged with gears 11 and 11' given to frames 10 and 10' of the objective lens, the grip 7 is then rotated, the objective-lens frames 10 and 10' are then rotated by the gears 10 and 10' given to the shaft 8 and the gears 11 and 11' given to the objective-lens

frames, and the objective-lens frames 10 and 10' are moved by screws 12 and 12' provided at the frames 10 and 10' in the axial direction. 13 and 13' designate the main body of the binoculars. The camera 14 is mounted in one lens barrel 13 as shown in the figure. 15 designates a film frame of the camera, and 16 designates a focal plane shutter. The camera 14 including these can be located at the position of the dotted line or at the position of the solid line centering on a camera supporting pin 18 when the camera grip 17 is moved in the direction of the arrow as shown in FIG. 2. Therefore, the camera acts as a telescope without blocking its field of view when viewed through the eye piece 6 while locating the camera at the position of the dotted line. Therefore, the film surface of the camera exactly coincides with the focal plane when the camera grip 17, which is telescopic as binoculars, is moved together with the other telescope in the direction of the dotted-line arrow, thus obtaining the position where the scene viewed through the eye piece can be photographed. The relationship between the camera 14 and the shutter button 19 is established so that the film of the camera 14 can be rolled, and the shutter can be charged, and the shutter of the camera 14 can be charged when an outside shutter 19 is pressed.

As described above, the binocular type camera of the present

invention is operated such that the camera 14 is moved by the camera grip 17 so as not to block the field of view of the eye piece 6, the eye piece 6 is then adjusted so that the cross and the frame 4 indicating the photographic range on the surface of the glass plate 5 can be clearly seen, the focus adjusting grip 7 is then moved, and a photographic subject is seen like ordinary binoculars. When there is a need to perform photography, the camera grip 17 is moved so that the camera can be located in one field of view of the binoculars, and then the shutter button 19 is pressed to photograph a photographic subject. As shown in the figure, the camera used for the present invention has a structure in which a general well-known camera including the film magazine, a spool 15, the focal plane shutter 16, etc., is reduced in size, and the shutter in the camera 14 can be charged by operating the shutter button 19.

As described above, the binocular type camera of the present invention is an extremely mobile telephotographic camera capable of very easily photographing a photographic subject which moves at high speed in distance and which has conventionally had extreme difficulty in being photographed, and capable of being used also as binoculars.

WHAT IS CLAIMED IS;

A binocular type camera characterized in that, as mentioned

in the present description, a miniature camera is mounted in one lens barrel of binoculars in which the focus is adjusted such that an objective lens is caused to move in and out while fixing a focal plane, and a film surface of the camera is caused to coincide with the focal plane of the objective lens, and the camera is moved from a focal point so that its focal plane can be seen through an eyepiece when photography is not performed, and, in the other lens barrel, a thin glass plate in which a cross and a photographic field have been carved is provided on the focal plane.

Fig.1

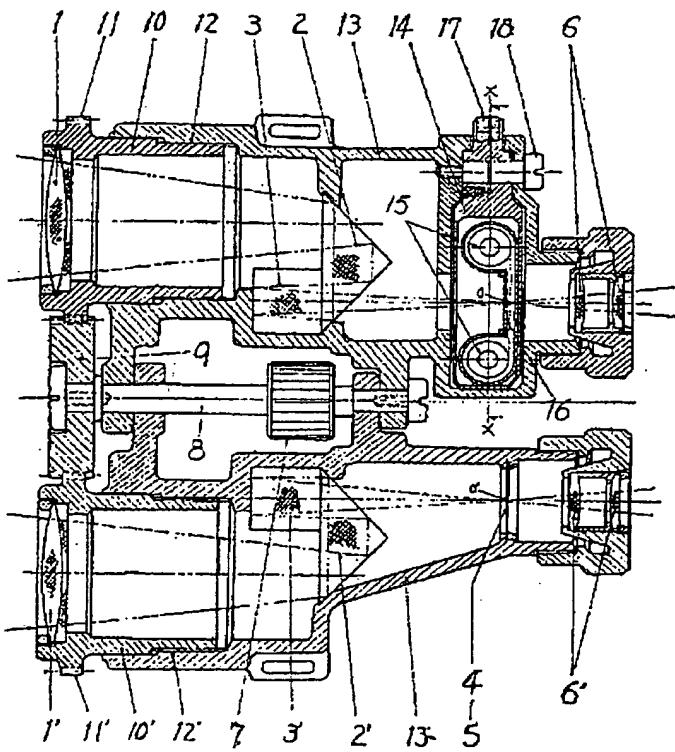


Fig.2

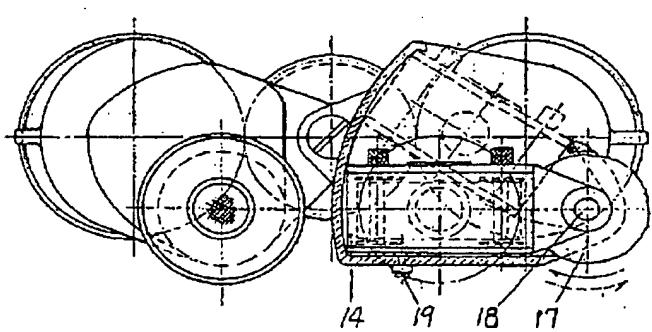


Fig.3

